UND CENTER FOR RURAL HEALTH

FAX TRANSMITTAL COVER SHEET

TO: David Nickelson **FAX #:** 202-224-7776

Office of Senator Kent Conrad

FROM: Brad Gibbens **FAX #:** (701) 777-2389

NUMBER OF PAGES: 7 **(Including cover sheet)**

CALL TO CONFIRM RECEIPT OF FAX: ____ (701) 777-3848

PLEASE NOTE: David:

School of Medicine response to FCC survey needs on Telecom.

Art.

Brad

UNIVERSITY OF NORTH DAKOTA • SCHOOL OF MEDICINE • P.O. BOX 9037 • GRAND FORKS, ND 58202-9037
PHONE: (701) 777-3848 • FAX: (701) 777-2389

UND CENTER FOR RURAL HEALTH

M E M O R A N D U M

TO: David Nickelson, Office of U.S. Senator Kent Conrad
FROM: Brad Gibbens, Associate Director, UND Center for Rural Health, UND School of Medicine and Health Sciences (UNDSOMHS)
DATE: December 13, 1996
RE: Response to Telecommunications Act of 1996

Thank you for informing us of the Senator's need for additional information from North Dakota on the Telecommunications Act. A fax was sent to all North Dakota hospitals and clinics on the request. Hopefully, you will receive some input from rural providers.

On Wednesday I also received a phone call from the ND Public Service Commission requesting that the Center contact rural providers on the PSC hearing scheduled for December 18, 1996. A special time has been set aside for rural providers to respond and provide input to the PSC. This request was also conveyed through the same fax.

Attached, is a detailed answer to the FCC questions contained in the survey. This will provide the Senator with background on the "Networking North Dakota Health Care" project involving the UNDSOMHS, Blue Cross/Blue Shield of North Dakota, and rural providers. The primary mechanism is the UNDSOMHS Medstar telecommunications system.

I would like to acknowledge individuals from the UNDSOMHS who contributed time and thought (in a very short period of time) in answering the questions and forming this response. They are as follows: H. David Wilson, MD, Dean; Judy DeMers, State Senator and Associate Dean; Tom Norris, PhD, Executive Associate Dean; Don Larson, Computer Services Coordinator; and Steve Gillespie, Communication Services Coordinator.

Please extend our thank you to Senator Conrad for being such a strong advocate for rural access to telehealth mechanisms.

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This response is submitted by the creators of the project "Networking North Dakota Health Care".

Background: In July of 1996 The University of North Dakota School of Medicine and Health Sciences (UNDSOMHS) and Blue Cross - Blue Shield of North Dakota (BCBSND) teamed up to submit a request for funds to the National Library of Medicine for the purpose of bringing a series of instructional programs to rural health care providers in North Dakota via the UNDSOMHS's MedStar Satellite Network and where necessary, utilizing other means. The stated purpose of these programs was to provide the rural health care providers with the training necessary to allow them to initiate and then utilize a connection into the Internet through their local phone company's Internet service or where such service was not available, through BCBSND's Community Health Care Information Network - THOR.

Though the grant request was not funded, BCBSND and the UNDSOMHS deemed the project so important that they first enlisted the support of North Dakota's rural telephone carriers in providing temporary data connections for the project and then funded the rest of the training effort by themselves.

The first eight programs in that series will be completed just before Christmas in 1996.

Questions to Address:

1. Name of project:

Networking North Dakota Health Care

2. Please list each of the project's sites:

Name of site: **State in which it is located:**

Ashley Medical Center @ Ashley, Indian Health Service Hospital @ Belcourt, Missouri Slopes Medical Arts Center @ Beulah, Family Medicine Center @ Bismarck, Mid-Dakota Clinic @ Bismarck, Bottineau Clinic - St. Andrew's Health Center @ Bottineau, St.Luke's Tri-State Hospital @ Bowmen, Towner County Medical Center @ Cando, Foster County Medical Center @ Carrington, Cavalier Clinic @ Cavalier, Griggs County Hospital @ Cooperstown, Lake Region Clinic @ Devil's Lake, Dickinson Clinic @ Dickinson, St. Lukes Hospital @ Crosby, Jacobson Memorial Hospital @ Elgin, Veterans Administration Center - West Acres Clinic - Family Practice Center - North Fargo Clinic - South West Clinic @ Fargo, Garrison Memorial Hospital @ Garrision, Unity Medical Center @ Grafton, Family Practice Center - Family Medicine Medical Park @ Grand Forks, St. Aloisius Medical Center @ Harvey, Sakakawea Medical Center @ Hazen, West River Clinic @ Hettinger, Hillsboro Clinic @ Hillsboro, Kenmare Community Hospital @ Kenmare, Dakota Clinic - Meritcare Clinic @ Jamestown, Cavalier Co Memorial Hospital @ Langdon, Linton Medical Center - Linton Hospital @ Linton, Community Memorial Hospital @ Lisbon, O & R Clinic @ Mandan, Union Hospital @ Mayville, Nelson County Community Hospital @ McVille, Center for Family Medicine - Medical Arts Clinic @ Minot, Northwood Clinic @ Northwood, Oakes Clinic - Community Hospital @ Oakes, St. Ansgar's Hospital @ Park River, Presentation Medical Center @ Rolla, Johnson Clinic - Heart of America Medical Center @ Rugby, Stanley Community Hospital @ Stanley, Tioga Medical Center @ Tioga, Valley City Meritcar - Mercy Hospital @ Valley City, Mckenzie Co Memorial Hospital @ Watford City, Craven-Hagen Clinic @ Williston, Wishek Community Hospital @ Wishek - All sites in North Dakota.

Please answer the following questions for each of your sites.
Use additional sheets if necessary.

3. What is the nearest city of population equal to or greater than 50,000 in your state, and approximately how far are you from its boundary?

Only three cities in North Dakota (Bismarck, Fargo and Grand Forks) have a population of nearly 50,000 or slightly more, and the distance that the rural sites in the Networking North Dakota Health Care project are from these cities varies from 30 to greater than 300 miles.

4. Name of the projects telecommunications service provider:

Nearly every rural telecommunications provider in North Dakota participated by providing free access to their Internet service for the duration of the educational series (through Dec. 1996). Blue Cross and Blue Shield of North Dakota provided (800 - number) dial-up service for the duration of the educational series for those rural sites where rural Internet service was not available yet, and both Blue Cross Blue Shield and the UND School of Medicine and Health Sciences made their existing dial-up services available to participants that could use them without incurring long-distance charges.

5. Level of telecommunications service the project is currently using: (For example, voice grade, 144 Kbps, (ISDN), 384 Kbps, T-1 or equivalent)

Voice grade connections were made by rural sites with 14.4 modems to local Internet Service provider, to Blue Cross Blue Shields THOR (800) service or to UND School of Medicine or Blue Cross Blue shield existing communications servers.

6. Charges for telecommunication services:

Is there a monthly charge? No Yes X
If yes, how much is the charge? Waived for initial series but costs vary from $2.50/hr to $19/mo.-ulimited access for a single user voice grade, dial-up account with the rural telecommunication providers across North Dakota and through Blue Cross Blue Shield's THOR service.

7. How does the project use telecommunications in the delivery of health care? (For example -- to send x-rays, distribute public health information, or perform video consultations. Please identify any occasional or episodic uses, such as might result from an outbreak of disease.)

The project, at this state, is primarily focused on the delivery of educational programming to participating health care providers and facilities. This programming is designed in the interest of upgrading user skills in Internet connectivity and the subsequent use of the Internet in communications, the delivery of health care services and the practice of medicine. Limited bandwidth currently precludes the possibilities of implementing applications in tele-radiology or video consultation, but would be suitable for dissemination of public health information. North Dakota has the first state-wide electronic immunization tracking system, and this system is scheduled to be connected to elementary and secondary schools in the near future. Such connections would constitute distribution of health information. Episodic uses could occur in the instances of such distribution of information for the purposes of alerting rural areas to the outbreak or subsequent treatment protocols for epidemics or other significant health care problems.

8. Could the project provide the services it is currently providing with less bandwidth? What effect would a lesser level of bandwidth have? (The implications of using greater or lesser levels of telecommunications services are related to image transmission time. What would be the impact if the health care activities for which you now use telecommunications took twice as long, or if they could be completed in half the time?).

No. The implications of utilizing less bandwidth.(less than 14.4Kbs or 28.8Kbs) would greatly reduce the effectiveness of the project. Image and data transmission would take twice as long. Time is essential in an under-served rural community and in an understaffed rural health care facility. Timely, accurate, and quick retrieval of information is essential. Furthermore, without an increase in bandwidth at reasonable costs, additional projects or project expansion may not be realized.

9. What are the implications of having a greater level of bandwidth?

Greater bandwidth will offer some protection against access difficulty due to congestion. It should be anticipated that the level of use will increase and if recent experience is a guide, this increase could be exponential as schools, libraries, health care facilities, local businesses, etc. begin to exploit the technology. It would be prudent to anticipate and avoid potential bottlenecks in data transmission created by this use, or by the use of multiple simultaneous applications. Where increased bandwidth is insufficient to achieve this, some bandwidth will have to be guaranteed for critical or emergency healthcare applications.
Increased bandwidth will also allow delivery of synchronous and asynchronous educational material of acceptable broadcast standard, incorporating detailed images, animation, demonstration of important principles, audio-visual interleaved files. This could be incorporated under the broad heading of tele-education, an aspect of critical importance given the frontier nature of much of the state.

Given the rural, isolated nature of the state, with its elderly and increasingly aging population, adequate bandwidth will also support tele-medicine and tele-consultation on a domiciliary basis, as care is brought to the elderly, either at home or in a rural skilled or basic care facility, by a wide range of health providers. Closely related to this is multi-point conferencing, also needing the provision of high bandwidth.

10. Do you have e-mail? No Yes X

11. Do you have Internet Access? No Yes X
If yes, do you incur long-distance charges by using it?
No X Yes
Please estimate your number of hours of Internet use per month:
20 - 60 hrs/mo. per site

12. If you have access to the Internet, please list any purposes other than e-mail (such as accessing databases such as Lexis/Nexis) for which you use it:

A. Joint discussions on clinical/academic matters via listserv or majordomo.
B. Distribution of timely and relevant information effortlessly with less cost over WWW home page (http://www.med.und.nodak.edu/).
C. Processing of questions from people who access to WWW home page (i.e., about academic program, clinical rotations, electives, etc.)
D. Providing academic instruction via WWW pages. Information provided on WWW pages replaces or augments traditional didactic lecture-type teaching (http://www.med.und.nodak.edu/depts/sportmed/fmed481.htm).
E. Communication with students in real-time voice and video conferencing.
F. Continuing Medical Education provided via the same method. Professionals in rural community need not leave their practice sites to stay abreast of the latest advances in medicine thereby avoiding gaps in community health care coverage.
G. Students remotely work on a project and upload the file(s) to the computer server so that the instructor can provide timely feedback (File Transfer Protocol or FTP). It also allows immediate peer-review of the project regardless of the distance among the reviewers.
H. Student performance at remote setting (rural hospital rotations) sent directly to the server where it is catalogued and ready for instructor to review. Timely feedback from the students will improve the quality of student experiences in clinical rotations as well as contributing to overall care of patients in rural setting.
I. Instructors and students who are preparing presentations import relevant and useful images and information to enhance the delivery of the material.
J. Patients are made aware of their own conditions and their treatment choices better with the use of WWW pages. Information on diseases and injuries that's available on Internet, perhaps told by their physician, contributes to patient education above and beyond the health care provider's counsel and pamphlets.
K. Searches are implemented for medical literature via databases such as Medline or Grateful Med.
L. Searches are implemented for relevant case studies to compare/contrast so that the most effective treatment can be administered to each patient in rural communities (AltaVista - http://altavista.digital.com or any other search engine

West River Regional Medical Center

Route 2, Box 124 Hettinger, ND 58639 701-567-4561

TELECOPIER COVER LETTER

Please deliver the following pages to:

NAME: DAVE NICKELSEN,

FIRM: OFFICE OF SENATOR CONRAD

CITY:

TELECOPIER PHONE NUMBER: (202) 224-7776

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FROM: JIM K. LONG

COMMENTS

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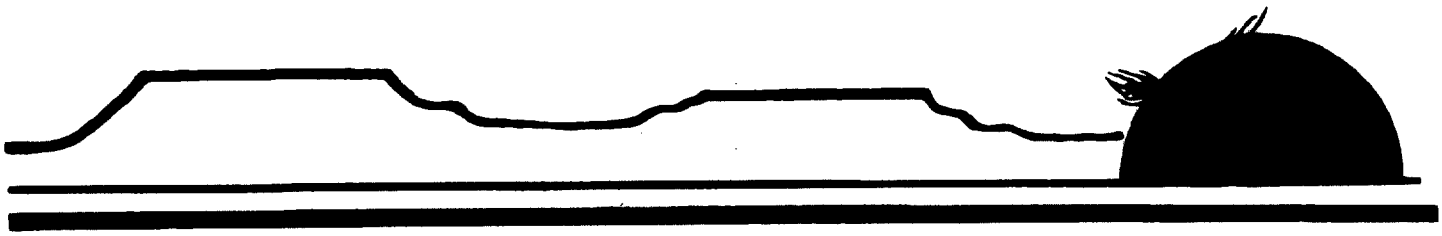

West River Regional Medical Center

Route 2, Box 124 Hettinger, ND 58639 701 567-4561

Date: December 12, 1996

To: Dave Nickelson, Office of Senator Conrad
via FAX 202-224-7776

From: Jim Long, Administrator/CEO

Re: Telecommunications Act of 1996

Mary Amundson of the North Dakota Center for Rural Health contacted us and indicated your need for input regarding our needs in telecommunications and telemedicine. The NDCRH developed a list of questions to expedite and simplify the process so my answers follow their developed format. Our responses are as follows:

1. Project name: West River Regional Medical Center-Telis Link.

2. Project sites:

Hettinger, ND	Lemmon, SD
Mott, ND	Bison, SD
New England, ND	McIntosh, SD
Bowman, ND	Isabel, SD
Scranton, ND	

3. Closest city: Bismarck, ND. Miles away: 150 miles.

4. Telecommunications service provider: Consolidated Telephone/US West.

5. Level of service: Voice.

6. Charges for services:
   Monthly charge - $30.00 to $40.00 per dial-up line.

   Usage charge - $.16/min discounted to $.115/min. (long distance)

   Distance component - Yes, for long distance (see above)

   Installation fee - Yes (but don't know, would need to get from CTC).

   Regular rate or tarriffed or discounted? - Discounted.

7. Use of telecommunications for project:
   a. Teleradiology - Transmit x-ray images between Hettinger, Lemmon, Bowman and Isabel sites. Do plan to add other sites as affordable to do so.

   b. Telemedicine - Interactive voice and video between Hettinger and its tertiary center, St. Alexius of Bismarck.

   c. Telecommunication-Data - Planned connection of computer systems between the Medical Center and its eight clinic sites. Eventually are hoping to have electronic medical record that can be accessed from any of our sites.

   d. Telecommunication-Voice - Just plain old talking to people will not be replaced. We need to be able to communicate between our eight communities as well as the patients outside those city boundaries and to the tertiary care center in Bismarck.

   e. Emergency Response-Lifeline - We have over 100 units out in our rural communities to insure a response should a patient/subscriber be unable to get to a telephone to summon help. Through pushing a button that they wear around their neck, a patient can summon help. Approximately half of our units need dial in through a long-distance line.

   f. Other medical - In addition to the preceding, we also send medical data over our telephone lines. We FAX EKG strips from our ICU to cardiologists, we send EEG readings to neurologists, we FAX various medical records to our clinics as well as to the tertiary center, we send fetal monitoring data to the neonate unit of the tertiary center, we have remote diagnostics performed on the computers of various medical equipment, and we obtain information through a MEDLINE connection in our library for unusual medical situations.

   g. Education - Through a combination of telephone lines and satellite transmission we obtain education for staff. We are a participant of the MedStar Network as well as ETN (Education Telephone Network).

8. Use less bandwidth than now?: No, for each telecommunication item we are using, we are using the lowest bandwidth that is workable. We would like to send 2K teleradiology images but, due to the time delay over standard voice lines, we simply can not transmit that level of quality image. A T-1 line is desired to make transmission of high quality images feasible from a time standpoint but at a cost of $15 or more per mile

per month, the cost makes such non-feasible from an economics standpoint.

To put a proper perspective to the comparisons of speed for sending teleradiology images, I offer the following. In a typical situation we are usually sending 2 to 3 images for a consultation. If we were to have these images sent as 2K (diagnostic level) images and sent over standard voice lines, it would take approximately 40 minutes per image or a total of 80 to 120 minutes to send and receive these images. In most situations, neither the patient nor the physician is willing to sit around for 1 1/2 to 2 hours to wait for the transmission. If we were sending those images to the tertiary center (150 miles away), we could drive the images there almost as fast.

9. What if greater bandwidth than experienced currently?: As explained in #8, it may speed the transmission of quality images to better support the healthcare professionals out "in the field" delivering care. This may help reduce unnecessary diagnostic testing because sufficient detail is transmitted for a truly diagnostic quality image to the radiologist.

   For the example given under item #8, a T-1 line would reduce the time to send 3 2K radiology images from 120 minutes to less than 5 minutes.

   Greater bandwidth would also increase the probability of more interactive video to remote sites. This may make consultations between medical professionals within the system as well as at the tertiary center more immediate and effective. It would also improve our ability to provide in-house education opportunities to support staff in our remote locations.

10. Do we have e-mail?: Yes. We have an internal e-mail system through our computer system and a limited connection for external e-mail.

11. Do we have Internet access?: Yes. We obtain Internet access through Consolidated Telephone at a fairly reasonable cost of $30/month base plus $5 for each e-mail address. Presently we have 5 staff with external e-mail addresses/Internet access.

12. Purposes of Internet: This is a new area for us (we only recently got "on the net") but uses to date include:
    - Physician Recruitment
    - Policy research (with "usenet news")
    - Medical document research
    - Committee correspondence
    - E-Mail

In summary, we are presently using telecommunications for many more applications in our medical center and clinics than just voice

communication. We know and desire to further expand our use of telecommunications and telemedicine but are limited by the cost factors of doing so. In our rural area we must pay for all the distance between lightbulbs for our remote and sparsely populated area.

This puts us at a severe disadvantage to our urban brothers and sisters as they have high people/patient concentrations over very short distances. To put the issue into proper perspective, our patient service area is 18,000 square miles. Within that area is approximately 25,000 patients/residents. Telecommunication charges for "long-distance" or for band-width at a "per mile" basis significantly limit our ability to use telecommunications to provide access to our patient population.

In the past our nation once pulled together in a major effort to provide rural electrification to the nation. Electricity was determined an essential an important technology that was expanded to the rural countryside. Maybe we should look at the information and technology of telecommunications in the same manner. For the betterment of our nation, to make it more competitive to the world marketplace, we should embark on an effort of "rural datafication". Perhaps the ability of our country to communicate and transmit data is as important in current history as electricity was in the past.

cc: Mary Amundson, NDCRH

(202)2247776

Questions to Address:

1. Name of project:

Telecommunications Act of 1996

2. Please list each of the project's sites:

Name of Site: State in which it is located:

St Ansgar's Health Center ND

Please answer the following questions for each of your sites. Use additional sheets if necessary.

3. What is the nearest city of population equal to or greater than 50.00 in your state, and approximately how far are you from its boundary?

City: Grand Forks Distance from city boundary: 60

4. Name of the project's telecommunications service provider:

?

5. Level of telecommunications service the project is currently using: (For example, voice grade, 144 Kbps (ISDN), 384 Kbps, T-1 or equivalent)

?

6. Charges for telecommunications service:

Is there a monthly charge? No ☐ Yes ☐
If yes, how much is the charge? _____

Is there a usage-based charge? No ☐ Yes ☐
If yes, how much is the charge? _____

Is there a distance component (such as a per-mile fee) of the charge? No ☐ Yes ☐
If yes, how much is the charge? _____

Was there an installation fee? No ☐ Yes ☐
If yes, how much was the charge? _____

Is the charge the regular tarrifed rate, or is there a discount from the telecommunications provider? Tarrifed ☐ Discount ☐
If there is a discount, how much is it? _____

7. How does the project use telecommunications in the delivery of health care? (For example -- to send x-rays, distribute public health information, or perform video consultations. Please identify any occasional or episodic uses, such as might result from an outbreak of disease.)

Currently use telecom for education, EKG readings, x-ray reports

Future send x-rays, supervise Nurse Practitioners, consults, outreach clinic tasks

8. Could the project provide the services it is currently providing with less bandwidth? What effect would a lesser level of bandwidth have? (The implications of using greater or lesser levels of telecommunications services are related to image transmission time. What would the be the impact if the health care activities for which you now use telecommunications took twice as long, or if they could be completed in half the time?)

Time is everything

9. What would the implications of having a greater level of bandwidth be?

- accuracy & clarity
- speed (Time involved impacts cost of high paid professionals

10. Do you have e-mail? No ☐ Yes ☑

11. Do you have Internet access? No ☐ Yes ☑
If yes, do you incur long-distance charges by using it?
No ☑ Yes ☐
Please estimate your number of hours of Internet use per month:
30

12. If you have access to the Internet, please list any purposes other than e-mail (such as accessing databases such as Lexis/Nexis) for which you use it:
Gopher searches

To: David Nickelson, Office of Senator Conrad

Fax: (202) 224-7776

From: Lynda K. Adams

Date: December 13, 1996

Pages: 1 page, including cover sheet.

Mr. David Nickelson,

This FAX is in response to the Telecommunications Act of 1996 questions. I do not have a copy of the survey form developed by Mr. Brad Gibbons, but I would like to share the information regarding Northwood Deaconess Health Center, 4 N. Park St., Northwood, ND.

fax

All that we use at this time in the telecommunications field is Medstar. It costs us $3050.00 per year.

We feel it is necessary to improve access to health care in rural areas through telecommunications. Even though we do not have the capabilities at this time, our long range goal is to make full use of that which is offered.

Sincerely,

From the desk of...

Lynda K. Adams
Marketing Director
Northwood Deaconess Health Center
P. O. Box 190, 4 North Park Street
Northwood, ND 58267

(701) 587-6467
Fax: (701) 587-5020